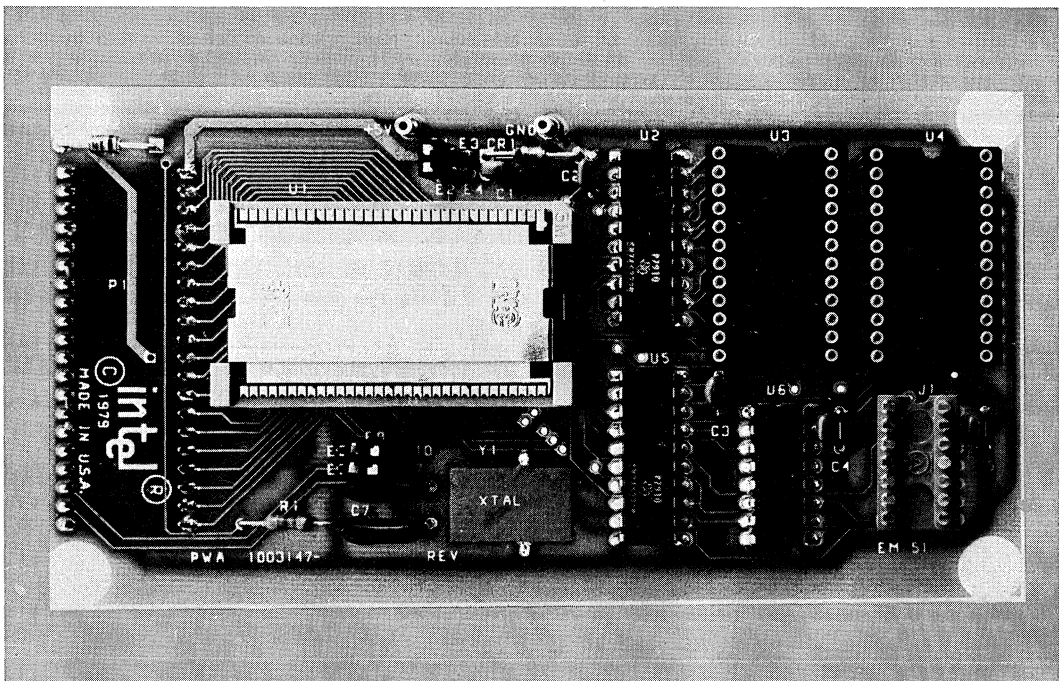




EM-51 8051 EMULATION BOARD

- Emulates 8051/8751/8031 functions on a 2.75" x 5.25" board assembly
- Replaces the 8051/8751/8031 in prototype systems
- Plugs directly into 8051/8751/8031 sockets
- Includes a 2732A EPROM device for program memory

The EM-51 emulation board is a small, ready-to-use microcomputer assembly that replaces an Intel 8051 family single-chip microcomputer in a prototype system. EM-51 includes sockets for 2716 or 2732 EPROMs, which substitute for the 8051/8751 on-chip program memory during prototype development. An Intel 2732A 4K x 8 EPROM is included with the board. With the memory in place, an EM-51 board becomes a full functional and electrical equivalent of the 8051 or 8751 microcomputer.



FUNCTIONAL DESCRIPTION

The EM-51 emulator board uses an Intel 8051 family single-chip microcomputer. The microcomputer is configured with additional input and output lines to let its on-chip ROM/EPROM program memory be replaced by EM-51 memory. The 8051's internal address, data, and control lines are connected through buffers to two sockets which accommodate the memory device(s).

Jumpers on the EM-51 board are used to select among memory, clock, and power options.

Memory Options

The EM-51 board uses an Intel 2732A EPROM, which provides 4K bytes of memory to replace the on-chip program memory. The board has two EPROM sockets, permitting you to use 2716 $2K \times 8$

EPROM as an option. Table 1 lists the memory device options by speed and power.

Clock Options

EM-51 operates with either a prototype system crystal or an on-board crystal supplied by the user. For example, the on-board option is helpful if you need to reduce the crystal-to-chip spacing. Intel Application Note AP-35 describes crystal selection criteria.

Power Options

An EM-51 can be powered from the prototype 8051 socket, an external 5-volt power supply, or a combination of the two. The combination option lets your prototype power supply support the 8051 while an external supply powers the additional EM-51 circuitry.

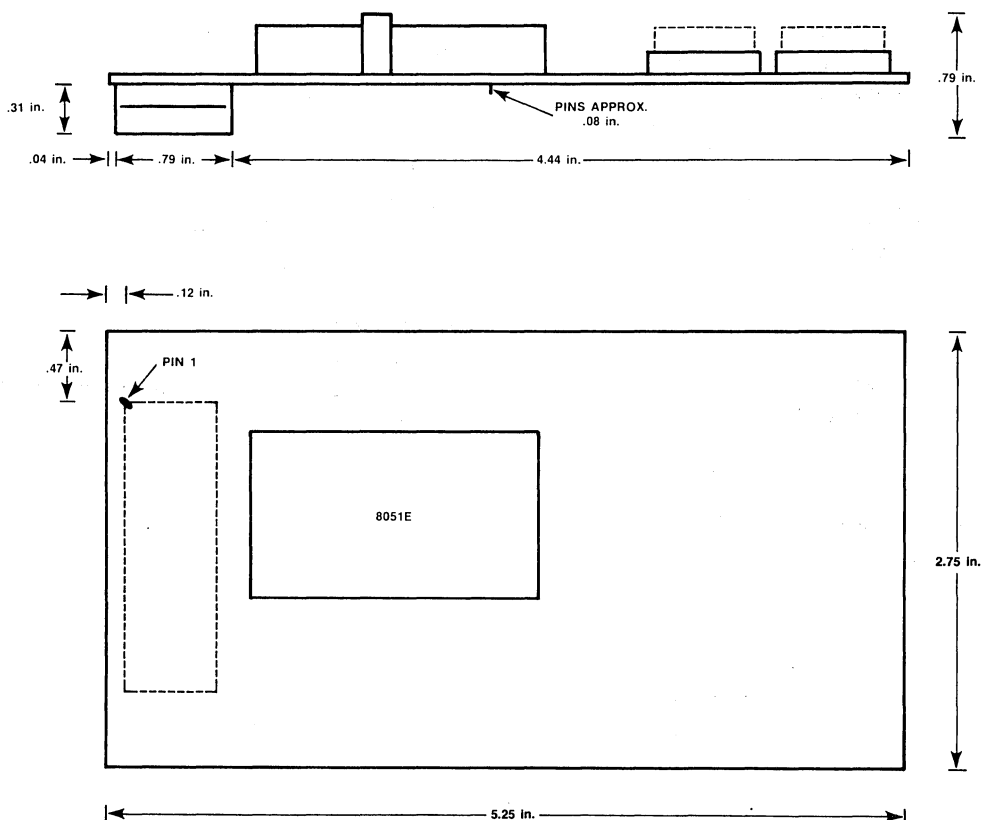


Figure 1. Dimensions

Table 1.

Memory Device	EM-51 Memory Options					
	2732A-2	2732A	2732	2716-1	2716-2	2716
Size per device	4K × 8			2K × 8		
Access time (ns) (from address) (from output enable)	200 70	250 100	450 120	350 120	390 120	450 120
Maximum Operating Frequency (MHz)	12.0	12.0	8.0	9.5	9.0	8.0
Maximum Power Consumption (mA) (8051)* (other circuitry)	225 500	225 500	225 500	225 550	225 550	225 550

* The 8051 configuration used on EM-51 may require more power than standard 8051, 8751, or 8031 devices.

SPECIFICATIONS

Equipment Supplied

EM-51 board assembly
EM-51 Operator's Manual
2732A EPROM

Physical Characteristics

Length: 5.25 in. (13.34 cm)
Width: 2.75 in. (6.99 cm)
Depth: 0.75 in. (1.91 cm)
Weight: 4 oz. (113 gm)

Electrical Characteristics

DC Power: $V_{CC} = 5V \pm 5\%$
 $I_{CC} = 775 \text{ mA}$ (maximum)

Timing: Same as Intel 8051 microcomputer

Environmental Characteristics

Operating Temperature: 0°C to 55°C
Operating Humidity: 95% (Maximum) relative humidity, non-condensing

Equipment Required

EPROM programmer
Power supply

Optional Equipment

Crystal for on-board clock

ORDERING INFORMATION

Part Number: MCI-51-EM

Description: 8051 Emulation Board